

REMARKS

Please reconsider the application in view of the above amendments and the following remarks.

Status of Claims

Claims 1, 3-13, 15-17, 19, 20 and 22-32 are rejected. Claims 1, 3-13, 15-17, 19, 20 and 22-32 are currently pending.

Claims Rejections – 35 USC § 102

Claims 1, 3-7, 9, 11-13, 16, 17, 20, 24-29 and 31 are rejected under 35 USC 102(e) as being anticipated by U.S. Patent No. 6,366,728 to Way et al. ("Way"). Applicant respectfully traverses this rejection and requests reconsideration.

Independent claim 1 recites "allowing chromatic dispersion to accumulate over a plurality of spans," "identifying a plurality of non-periodically spaced low loss spans" and "compensating for dispersion accumulated on said plurality of spans using a plurality of dispersion compensating fibers...directly coupled to an associated one of said low loss spans." Similarly, independent claim 27 recites "high loss spans and low loss spans" and at least one Raman/EDFA amplifier including "at least one dispersion compensating fiber coupled to one of said low loss spans." Independent claim 20 recites "allowing chromatic dispersion to accumulate over a plurality of spans of said optical path to a first predetermined level before amplifying said signal with said Raman/EDFA amplifier."

Applicant respectfully points out that the Office action mischaracterizes the Way patent. The Office action refers to the individual fiber portions 202, 204, 206 in the composite transmission line 12 as spans. As used in the present application, a "span" extends between

optical components (e.g., between two amplifiers, between a transmitter and receiver without amplifiers, or between a transmitter/receiver and an amplifier). See present specification, p. 4, ll. 10-17. As such, the composite optical fiber transmission line 12 shown in FIG. 1 of Way is a span because it extends between a transmitter 14 and a receiver/repeater 16. See Way, col. 9, lines 62-67, and col. 10, lines 1-7. The individual fiber portions 202, 204, 206 included in the composite optical fiber transmission line 12 do not extend between amplifiers or between a transmitter/receiver and an amplifier and thus are not spans.

Therefore, Way fails to disclose allowing dispersion to accumulate over a plurality of spans, as recited in independent claims 1 and 20. In contrast, Way teaches that the dispersion properties of each span should be made essentially equal by using the composite lines or spans. In particular, Way states that “the residual chromatic dispersion of an optical signal that passes through the composite optical fiber transmission line results in zero or near zero chromatic dispersion.” See Way, col. 13, lines 55-65. In other words, dispersion is compensated in each line (or span) 12, rather than allowing dispersion to accumulate over a plurality of spans.

With respect to independent claim 27, Way fails to disclose high loss spans and low loss spans. In fact, Way mentions nothing of the loss associated with the transmission line (or span) 12. Moreover, Way does not disclose a Raman/EDFA amplifier including “at least one dispersion compensation fiber coupled to one of said low loss spans,” as recited in claim 27. In Way, all of the composite optical fiber transmission lines 200 include a DCF (dispersion compensation fiber) portion 206. Way makes no distinction between composite optical fiber transmission lines (or spans) 12, 200 having low loss and lines (or spans) 12, 200 having high loss.

For these reasons, Applicant respectfully submits that Way does not anticipate independent claims 1, 20 and 27 or the claims dependent therefrom.

Independent claims 13 and 17 recite a Raman/EDFA amplifier in which "said EDFA portion is a single stage EDFA." As described in the present application on page 6, lines 13-21, and page 7, lines 18-25, the use of a single-stage EDFA in a Raman/EDFA amplifier allows for improved noise performance compared to conventional two-stage EDFAs.

Although Way discloses a Raman/EDFA 16 in FIG. 2, Way does not disclose that the amplifier 34 (or EDFA portion) is a single stage EDFA. The Office action cites to column 8, lines 30-64, which discusses single-mode fiber but mentions nothing of EDFAs much less a single stage EDFA. The Office action also refers to column 15, lines 12-23, which merely describes the composite optical transmission lines 200 and mentions nothing of EDFAs.

For this reason, Applicant respectfully submits that Way does not anticipate independent claims 13 and 17 or the claims dependent therefrom. Because none of the amended independent claims are anticipated by Way, Applicant respectfully requests that the rejection under 35 USC 102 be withdrawn.

Claims 8, 10, 15, 19, 22 and 23 are rejected under 35 USC 103 as being unpatentable over Way in view of U.S. Patent No. 6,466,362 to Friedrich. Applicant also respectfully traverses this rejection.

The Friedrich patent fails to disclose or suggest the elements and limitations described above, which are missing from Way. Thus, even if Way could be combined with the Friedrich patent, the combination would not teach all of the claimed elements and limitations.

Accordingly, Applicant requests that the rejection of claims 8, 10, 15, 19, 22 and 23 under 35 USC 103 be withdrawn.

Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Way. Applicant also respectfully traverses this direction.


As mentioned above, Way makes no distinction between lines (or spans) 12, 200 having high loss and lines (or spans) 12, 200 having low loss. Thus, the specific ranges for high loss spans and low loss spans recited in dependent claims 30 and 32 would not have been obvious. Moreover, the Office action fails to provide a teaching reference or any other evidence to support the stated motivation for the claimed ranges.

The Office action thus fails to establish *prima facie* obviousness of claims 30 and 32. Accordingly, applicant requests that the rejection of claims 30 and 32 under 35 U.S.C. 103 be withdrawn.

The claims have been shown to be allowable over the prior art. Applicant believes that this paper is responsive to each and every ground of rejection cited by the Examiner in the Office Action dated June 28, 2005, and respectfully requests favorable action in this application. The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

Please apply any charges not covered, or any credits, to Deposit Account No. 50-2121 (Ref. No. 1020).

RESPECTFULLY SUBMITTED,

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